

Claims

1. A method for managing subscriber identities (31) in a mobile communication network where one and the same mobile station (MS) uses one or more subscriber identities (31), **characterized** in that the location management functions associated with a mobile station (MS) are divided into at least two parts of which at least one is reserved as common to the subscriber identities (31) in one and the same mobile station (MS) and at least one other part is reserved as separate for the subscriber identities (31) in one and the same mobile station (MS) and which subscriber identities (31) in the mobile station (MS) are managed through a common identity.
2. The method of claim 1, **characterized** in that functions common to the subscriber identities (31) in one and the same mobile station (MS) are handled through at least one MM layer part.
3. The method of claim 2, **characterized** in that the common part of the MM layer is used for the paging of the subscriber identities of a mobile station (MS).
4. The method of claim 1, **characterized** in that in the common part of the MM layer, the equipment identity of the mobile station (MS) functions as the common identity of the subscriber identities (31) in one and the same mobile station (MS).
5. The method of claim 1, **characterized** in that in the common part of the MM layer, the common identity of the subscriber identities (31) in one and the same mobile station (MS) is one of the subscriber identities (31) belonging to the mobile station (MS).
6. The method of claim 1, **characterized** in that said subscriber identities (31) in one and the same mobile station (MS) are paged using one paging channel (PCH).
7. The method of claim 1, **characterized** in that the information about the common identity of the subscriber identities (31) in one and the same mobile station (MS) is stored in a core network (CN).
8. The method of claim 7, **characterized** in that in the core network (CN) the information about the common identity is stored in a HLR register.
9. The method of claim 8, **characterized** in that the information about the common identity is updated in the HLR register.

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10. The method of claim 9, characterized in that the information about the common identity is updated in conjunction with a location update.
11. The method of claim 9, characterized in that the information about the common identity is updated in conjunction with a terminating connection.
- 5 12. The method of claim 9, characterized in that the information about the common identity is updated in a MAP message.
13. The method of claim 1, characterized in that the mobile station (MS) transmits a location update request including subscriber identity information and indicator information indicating whether the location update request has been transmitted
10 for every subscriber identity (31).
14. The method of claim 9, characterized in that the location update for the subscriber identities (31) is carried out through the coordinating part (33) of the MM layer.
- 15 15. The method of claim 9, characterized in that a HLR register corresponding to each particular subscriber identity (31) transmits the location information of the subscriber identity (31) to the HLR register corresponding to the common identity.
16. The method of claim 1, characterized in that when paging subscriber identities (31), the paging message includes at least the information about the common identity.
- 20 17. The method of claim 1, characterized in that when paging a subscriber identity, the paging message includes an IMSI code, TMSI code and an IMEI code.
18. A system for realizing location management functions of mobile stations (MS) having more than one subscriber identity (31), characterized in that the system comprises a first element for realizing the common functions of the subscriber
25 identities (31) of each mobile station (MS) and at least one other element for realizing subscriber-specific functions of the subscriber identities (31).
19. A network element for realizing location management functions of mobile stations (MS) having more than one subscriber identity (31), characterized in that the network element comprises a first element for realizing the common functions of
30 the subscriber identities (31) of each mobile station (MS) and at least one other element for realizing subscriber-specific functions of the subscriber identities (31).

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20. The network element of claim 19, **characterized** in that the network element is a mobile switching center (MSC).
21. The network element of claim 19, **characterized** in that the network element is a radio network controller (RNC).
- 5 22. A mobile station (MS) arranged so as to use more than one subscriber identity (31), **characterized** in that the mobile station (MS) comprises a first element (34) for realizing common functions of the subscriber identities (31) and at least one other element (35) for realizing the specific functions of the subscriber identities (31).

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